International Journal Dental and Medical Sciences Research
Volume 4, Issue 4, July-Aug 2022 pp 759-765 www.ijdmsrjournal.com ISSN: 2582-6018

To study the clinicopathological correlation of the breast lumps in a tertiary care centre. Clinicopathological correlation of breast lumps.

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Submitted: 10-08-2022 Accepted: 25-08-2022

ABSTRACT
BACKGROUND: Breast cancer is the most commonly diagnosed cancer and most common cause of death among women worldwide. Vast majority of diseases that occur in breast are benign. With the use of mammography, ultrasonography and fine needle biopsy, the diagnosis of breast diseases has become easy and also it is helping in early diagnosis of malignancy and better treatment of it.
MATERIAL AND METHODS: A prospective study conducted in department of general surgery, GMC Jammu from NOV 2019- OCT 2020. A total of 100 patients presenting with breast lump were included in the study.
RESULTS: Out of 100 patients included in the study, 56% of the patients had benign lumps while 44% of the patients had malignant lumps. The maximum patients were in the age group of 31-40 years (30%). Most of the patients presented with left sided breast lump with total of 62 patients. Upper outer quadrant was most commonly involved. On histopathological examination, out of 100 patients with breast lump, 44 were diagnosed to have carcinoma breast, 22 with fibroadenoma, 22 were diagnosed to have mastitis, 08 with papilloma and 04 with lipoma.
Conclusion: Risk assessment is important for both the clinician and the patient to assist in making decisions regarding screening, prophylactic treatment and surveillance. With the use of mammography, ultrasonography and fine needle biopsy, the diagnosis of the breast disease has become easy and also it is helping in early diagnosis of malignancy and better treatment of it.
KEYWORDS: Breast lump, fibroadenoma, papilloma, carcinoma breast.

I. INTRODUCTION:

Breast is modified sweat gland derived from ectoderm. The mammary gland is a unique organ in that it is not fully formed at birth, undergoes cyclical changes during reproductive life. The breast is composed of specialized epithelium and stroma that may give rise to both benign and malignant lesions**.**[1] The changes in breast of a female are usually associated with inordinate anxiety and apprehension from the patient and her family. As such changes of array of presentations and pathological findings which according to modern protocol demands a step-wise diagnostic approach involving clinical, radiological and pathological examination.[2] Early diagnosis is the key to increase in survival rate but social, religious factors, unawareness regarding the fatality of the disease, false vanity and fear of infertility delay the diagnosis as well as the treatment. In lactating females, inflammatory lesions are common while young adults have benign etiologies common for breast lump and malignant lumps are common in old female.[3] Of all breast disorders, palpable breast lump is the second most common presentation, pain being the first.[4] Patients with a benign lump but having a family history of breast cancer also have an associated increased relative risk for cancer. 50% of breast cancer patients do not have any specific risk factors. Breast cancer is the most commonly diagnosed cancer and most common cause of death among women worldwide. Breast problems for which patients consult doctors are breast pain, nipple discharge and palpable masses. 10-15% of women with benign breast diseases will complain of pathological nipple discharge. A breast mass and a cyst need histological diagnosis whereas the breast pain (mastalgia) remains the most common symptom in women.[5]

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AIMS AND OBJECTIVES

- To study the epidemiology of breast lumps.
- To correlate clinical, pathological and radiological findings in these patients.

MATERIALS AND METHODS

STUDY DESIGN: This prospective study has been conducted in department of general surgery, GMC Jammu.

Duration of study: One year (1 NOV 2019- 31ST OCT 2020)

INCLUSION CRITERIA

All patients with complaints of breast lump, irrespective of age and sex.

EXCLUSION CRITERIA

1. Patient with locally or systemically advanced disease.
2. Patient not giving consent for study.

Different modalities were used for the assessment of breast lumps namely clinical assessment, imaging and pathological examination. Clinical assessment includes the full history of the patient pertaining to the present, past, gynaecological and family history. Clinical breast examination was done after obtaining consent. Lumps in the breast were described by their:

- Location in one of the 4 quadrant
- Size- largest diameter
- Tenderness
- Consistency – hard, firm, soft
- Fixity to skin or underlying structures

After clinical examination some patients were sent for imaging, either ultrasound or mammography or both. All patients have undergone pathological assessment either by FNAC or biopsy or both.

Data collected was analyzed and the following variables were studied:

- Age distribution of the different types of lumps.
- The ratio of benign to malignant lumps.
- Duration of lumps.

II. RESULTS:

In our study, total of 100 patients with palpable breast lump were included. All the patients in the study were female. The youngest patient in this study was 18 years while oldest patient was of 75 years. The maximum patients were in the age group of 31-40 years followed by the age group of 21-30 years.(Table I)

TABLE I: Age wise Distribution

S.NO.	AGE(in years)	No. of cases	Percentage
1.	≤ 20	10	10%
2.	21-30	26	26%
3.	31-40	30	30%
4.	41-50	20	20%
5.	>50	14	14%
	Total	100	100%

The females presented with complaints ranging from lump in breast to lump with nipple discharge. Among 100 patients, 44 presented with lump with pain, 36 with breast lump only, 16 presented with lump, pain and fever, 02 presented with lump and nipple discharge, and 02 presented with lump, pain and nipple discharge.(Table II)

TABLE II: Distribution of study population according to complaints

S.NO.	Complaints	Frequency	Percentage
1.	Lump only	36	36%
2.	Lump with pain	44	44%
3.	Lump with discharge	02	02%
4.	Lump, pain, nipple discharge	02	02%
5.	Lump, pain, fever	16	16%
	Total	100	100%

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Patients with breast lump presented to hospital in varied duration from the onset of symptoms. Most of the patients between 1-6 months of onset of symptoms with total of 34, 24 patients presented within 1month of onset of symptoms, 16 presented between 7-12 months and 26 presented after 12 months of onset of symptoms. Most of the patients presented with left sided breast lump with total of 62 patients, right sided involvement was seen in 38 patients with none of the patient showing bilateral involvement. Upper outer quadrant involvement was seen in most of the patients.(Table III)

TABLE III: DISTRIBUTION OF PATIENTS ACCORDING TO LOCATION OF BREAST LUMP.

S.NO.	Location	Frequency	Percentage
1.	Upper outer	46	46%
2.	Upper inner	14	14%
3.	Lower outer	10	05%
4.	Lower inner	06	06%
5.	Central	20	20%
6.	Lower outer + lower inner	04	04%
	Total	100	100%

A total of 58 patients presented with less than 5cm of size of the lump and 42 patients presented with equal to or more than 5cm of lump. The distribution of study population varies in relation to consistency of the breast lump. 22 patients presented with soft consistency, 38 presented with firm and 40 presented with hard consistency. Hard lumps were found in majority of females having malignant pathology. All lumps with soft consistency were benign. Out of 100 patients, tenderness was felt in 42 patients. Tenderness was mostly felt in patients with inflammatory lumps. 18 patients presented with fixity of the lump to the skin. Fixity was mostly seen in patients with malignant lumps. Out of 100 patients, 24 patients had axillary lymphadenopathy. On clinical examination, 38 patients were suspected to have carcinoma breast, 24 were suspected to have fibroadenoma, 22 with breast abscess, 08 suspected to have papilloma, 06 suspected to have lipoma and 02 suspected to phylloides tumor.(Table IV)

TABLE IV: Distribution of study population on basis of diagnosis after clinical diagnosis

S.NO.	Diagnosis	Frequency	Percentage (%)
1.	Breast abscess	22	22
2.	Fibroadenoma	24	24
3.	Papilloma	08	08
4.	Carcinoma breast	38	38
5.	Phylloides tumor	02	02
6.	Lipoma	06	06
	Total	100	100

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In our study, a total of 88 patients have undergone USG Breast. Out of which, 32 patients were diagnosed with malignancy, 20 patients with breast abscess, 18 patients with fibroadenoma, 08 patients with papilloma, 06 with lipoma, 02 with fibroadenosis and 02 with galactocele. Mammography was performed in total of 76 patients. Malignancy was reported in 40 patients, fibroadenoma in 14 patients, benign lesion in 14 patients, multiple calcification in 04 patients, multiple fibroadenomas in 02 patient and 02 reported with fibroadenosis. On histopathological examination, out of 100 patients with breast lump, 44 were diagnosed to have carcinoma breast, 22 with fibroadenoma, 22 were diagnosed to have mastitis, 08 with papilloma and 04 with lipoma.(Table V)

TABLE V: Diagnosis of study population of breast lump by histopathology

S.NO.	Diagnosis	Frequency	Percentage
1.	Breast abscess	22	22%
2.	Fibroadenoma	22	22%
3.	Papilloma	08	08%
4.	CA Breast	44	44%
5.	Benign phylloides tumor	00	0%
6.	Lipoma	04	04%
	Total	100	100%

The most common histological diagnosis among malignant lesions was invasive ductal carcinoma (32), followed by infiltrating ductal carcinoma (10) and 02 patients with medullary carcinoma. In our study, 56% of the patients had benign lumps while 44% of the patients had malignant lumps. Fibroadenomas were mostly seen in younger age group while carcinoma of the breast mostly seen in older age group.

TABLE VI: Correlation of Clinical diagnosis with Histopathology.

S.NO	Disease	Clinical	Histopathology
1.	Breast abscess	22	22
2.	Fibroadenoma	24	22
3.	Papilloma	08	08
4.	Carcinoma breast	38	44
5.	Phylloides tumor	02	00
6.	Lipoma	06	04

Pearson Correlation Coefficient (R) is: 0.9926.

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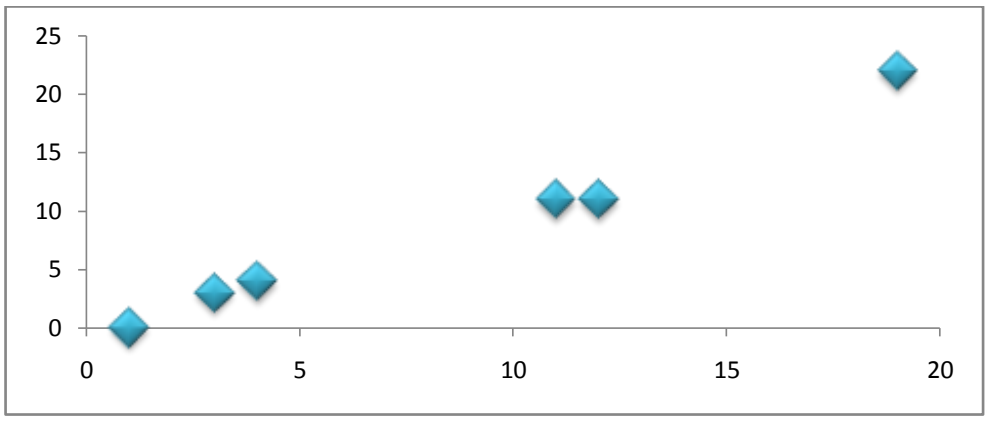

S

This is strong positive correlation, which means that high X variable scores go with high Y variable scores and (vice versa).

Description of Breast lumps (p<0.05 is significant).

		Benign	Malignant	Total	P-Value
Lump size	≥5cm <5cm	12 44	30 14	42 58	<0.05 <0.05
Clinical Entity	Clinically Benign Clinically Malignant	54 02	06 38	60 40	<0.05 <0.05

In our study, 42 patients presented with lump size less than 5cm, out of which 12 were benign and 30 were malignant while 58 patients presented with lump size more than and equal to 5cm, out of which 44 were benign and 14 were malignant. The p value was 0.0023, which is statistically significant. On clinical examination, 60 patients found to be clinically benign and 40 found to be clinically malignant. Out of these 60 clinically benign patients, 54 patients were proven benign and 06 proved to be malignant while from 40 patients of clinically malignant, 02 proved to be benign and 38 proven malignant. The p value was 0.00001, which is statistically significant.

III. DISSCUSSION:

In our study, it was found that breast diseases were common in reproductive age group (20-40 years), with most cases between 31-40 years of age which is similar to studies conducted by Lakshmi A et al.[6] The age of patients was ranging from 18-75 years with mean age of 37.72 years while in a study by Murali U et al age of the patients was 14-79 years with mean age of 40.5 years.[7] In another study by Jain SB et al**,** age of the patients was 14-81 years with mean age of 32 years.[8] In our study, 62% of the patients had lump in the left breast, 38% had lump in the right breast while no patient reported with bilateral breast lump. In the study by Murali U et al**,** 50.5% of patients had lump in left breast, 43.15% of patients had lump in right breast while 6.3%had lumps in both the breasts.[7] On the contrary, Kumar R in his study stated that 51.4% of patients had lump in right breast, 42.8% patients had lump in left breast while 5.76% patients had lumps in both the breasts.[3] In a study by Ugwu-Olisa OA et al**,** 45.7% of patients had lump in right breast, 39.0% had lump in left breast while 15.3% had lumps in both breast.[2] In our study 36% of the patients presented with complaint of only lump in breast, 44% of the patients presented with complaints of lump in breast with pain, 16% of the patients presented with lump in breast with pain and fever and 2% each presented with lump in breast with discharge and lump in breast with pain and discharge. This is consistent with the study by Mst. Shahnaj Pervin et al which stated that majority of females (42%) present with lump breast with pain followed by 27% of the females with lump in

breast alone.[9] In the study by Murali U et al, 74% of the females presented with only lump in breast while 23% of the fem ales presented with lump in breast with pain.[7] In our study, 34% of the patients presented between 1-6 months of appearance of symptoms, 26% of the patients presented after 12 months of the symptoms, 24% of the patients presented within 1 month and 16% presented within 6-12 months. In the study by Murali U et al**.,** 14.7% presented within 1 month of onset of complaints, 26.4% presented within 1-3months, while 52.3% presented between 3-6months.[7] In the study by Sankar K, 31.6% presented within 1 month of onset of symptoms, 30% presented within 1-6 months, 31.4% presented within 6-12 months and 7% presented after 12 months.[10] In our study, 22 patients presented with soft lump, 38 patients presented with firm lump and 40 patients presented with hard lump. In the study by Murali U et al, 16 females had lump with soft consistency, 38 had firm consistency and 41 had hard consistency.[7] In our study, maximum breast lumps (46) were found in upper outer quadrant while the least (4) were placed in multiple quadrants. Mst. Shahnaj Pervin et al, in their study had maximum lumps (47.6%) in upper outer quadrant.[9] In the study by Kumar B et al, maximum breast lumps (39%) were found in upper outer quadrant with least in multiple quadrants.[4] In another study by Ugwu-Olisa OA et al, maximum breast lumps (41.72%) were found in upper outer quadrant.[2] Our findings are consistent with the findings of the above studies. In our study, 56% of the patients had benign lumps while 44% of the patients had malignant lumps. In the study by Jain SB et al, 20% of the patients had malignant lumps and 80% patients had benign lumps.[8] In the study by Murali U et al., 43.3% patients had malignant lumps while 56.7% patients had benign lumps.[7] In the study conducted by Mst. Shahnaj Pervin et al, 58% of patients had benign lumps while 42% of the patients had malignant lumps.[9] In the study by Kumar R, 7.4% of the patients had malignant lumps while 92.6% of the patients had benign lumps.[3] Our findings coincide with the study of Murali U et al, and Mst. Shahnaj Pervin et al. In our study, the most common histological diagnosis among benign lesion was fibroadenoma (22%) and breast abscess (22%) followed by papilloma (08%) and then lipoma (04%). In the study by Jain SB et al**,** the most common benign lesion was fibroadenoma (57%), followed by fibroadenosis (9%).[8] In a study by Kumar R, the most common lesion was fibroadenoma(21.81%) followed by fibroadenosis (14.81%) and then by chronic mastitis(15.22%).[3] In a study by Mst. Shahnaj Pervin et al, the most common benign lesion was fibroadenoma (37%), followed by fibroadenosis (17%).[9] In a study by Ugwu-Olisa OA et al, the most common benign lesion was fibroadenoma (33.8%) followed by fibroadenosis (17.2%)[2]. In a study by Murali U et al, the most common benign lesion was fibroadenoma (25.2%) followed by fibroadenosis (16.8%) and then by breast cyst (10.52%).[7] In a study by Shanthi V et al, the most common lesion was fibroadenoma (51%) followed by fibrosis (6%).[11] Our results are consistent with the results of above studies. In our study, the most common histological diagnosis among malignant lesions was invasive ductal carcinoma (32) followed by infiltrating ductal carcinoma (10) and 02 patient with medullary carcinoma. In a study by Kumar R the only malignant lesion was Invasive ductal Carcinoma (2.88%)[3]. In a study by Mst. Shahnaj Pervin et al, the most common malignant lesion was Invasive ductal Carcinoma (29%) followed by mucinous adenocarcinoma (5%).[9] In a study by Ugwu-Olisa OA et al, the most common malignant lesion was Invasive ductal Carcinoma (32.8%) followed by Invasive lobular Carcinoma(5.3%).[2] In a study by Murali U et al, the most common malignant lesion was Invasive ductal Carcinoma (23.15%) followed by Invasive lobular Carcinoma (2.10%).[7] In a study by Shanthi V et al, the most common malignant lesion was Invasive ductal Carcinoma (22%) followed by Invasive lobular Carcinoma (2%).[11] Our results are consistent with the results of above studies.

IV. CONCLUSION:

In our study, the clinicopathological profile of breast lumps is comparable to the studies reported from Indian origin. Risk assessment is important for both the clinician and the patient to assist in making decisions regarding screening, prophylactic treatment and surveillance. The advantage of assessing the possible risk of progressing to malignancy in benign disease is that regular clinical and radiological follow-up can detect malignancy at an early, potentially curable stage. Malignancy not only poses financial burden on the patient, their family and society but also is responsible for emotional distress. The majority of the patients seek medical advice when disease is fairly advanced. With the use of mammography, ultrasonography and fine needle biopsy, the diagnosis of the breast disease has become easy and also it is helping in early diagnosis of malignancy and better treatment of it.

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